

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s) : Thomas GRAFENAUER

Group Art Unit: 1774

Appn. No. : 10/697,560

Examiner: L. D. Ferguson

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For : PANEL AND PROCESS FOR PRODUCING A PANEL

Commissioner for Patents
U.S. Patent and Trademark Office
Customer Service Window, Mail Stop Amendment
Randolph Building
401 Dulany Street
Alexandria, VA 22314

AMENDMENT UNDER 37 C.F.R. §1.111

Sir:

In response to the Office Action dated March 10, 2006, please amend the above-identified application as follows.

A listing of claims is set forth on pages 2-5.

Remarks begin on page 6.

If extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. §1.136(a), and any fees required therefor (including fees for net addition of claims) are hereby authorized to be charged to Deposit Account No. 19-0089.

AMENDMENT TO THE CLAIMS

Please **AMEND** claims 1, 3-5, 7, and 8 as follows.

Please **ADD** claims 16-22 as follows.

A copy of all pending claims and a status of the claims is provided below.

1. (currently amended) A panel, ~~in particular floor panel~~, having a support board made of glued and compressed fiber material to which a termination layer is applied in each case on a top side and an underside, and the termination layer of the top side has a structured surface, ~~characterized in that~~ wherein the density on the top side of the support board is lower than the density of the support board on the underside.
2. (previously presented) The panel according to Claim 1, wherein the support board has a density of less than 700 kg/m³.
3. (currently amended) The panel according to Claim 1, wherein a gluing factor of the support board is greater than 10%.
4. (currently amended) The panel according to Claim 1, wherein by UF resins or MUF resins are used as the a means for gluing the fibers of the support board.
5. (currently amended) The panel according to Claim 1, wherein isocyanates are used as the a means for gluing the woodbased materials of the support board.
6. (previously presented) The panel according to claim 5, further comprising a gluing factor of less than 20% for isocyanates.
7. (currently amended) The panel according to Claim 1, further comprising a mixture of isocyanates and UF or MUF resins as the a means for gluing the woodbased materials of the support board.

8. (currently amended) The panel according to Claim 1, wherein the support board has a non-uniform density distribution over ~~the~~its cross section from the top side to the underside.

9. (previously presented) The panel according to claim 8, wherein a density of 1000 kg/m³ is present on the underside of the support board, while a density of from 400 kg/m³ to 600 kg/m³ is present in the center of the support board.

10. (canceled)

11. (withdrawn) A process for producing a panel, in particular floor panel, in the case of which a support board is produced by the compression and heating of glued woodbased materials, and the support board is provided with a structured surface on a top side, and a termination layer is applied to the support board provided with a stamped formation, characterized in that the density on the top side of the support board is set to be lower than the density of the support board on the underside.

12. (withdrawn) The process according to Claim 11, wherein the different densities are set by virtue of a cover layer of the top side being ground off.

13. (withdrawn) The process according to Claim 11, wherein the different densities are set by the single-sided application of heat-conducting media, in particular water, to the underside prior to the woodbased material being heated.

14. (withdrawn) The process according to one of Claim 11, wherein the structured surface is produced by a grinding-off and/or stamping operation.

15. (withdrawn) A process for producing a support board made of glued and compressed woodbased fiber material for a panel, in particular floor panel, in a case of

which a density on a top side of the support board is lower than a density of the support board on a underside, and in the case of which the fiber material is compressed with a supply of pressure and heat, wherein the density on the top side of the support board is set to be lower than a density of the support board on the underside by a single-sided application of water to the underside prior to the woodbased material being heated and compressed.

16. (new) A panel, comprising:

 a support board composed of glued, compressed fiber material, having a top side and an underside;

 a first termination layer provided on the top side;

 a second termination layer provided on the underside,

 wherein the density of the support board continuously decreases from the top side to a substantial midpoint of the support board, and continuously decreases from the underside to the substantial midpoint.

17. (new) The panel of claim 16, wherein the density at the top side is less than the density at the underside.

18. (new) The panel of claim 16, wherein the first termination layer comprises a decoration.

19. (new) The panel of claim 16, wherein the first termination layer comprises a structure composed of a stamping.

20. (new) The panel of claim 16, wherein a density distribution through a thickness of the support board is substantially parabolic in shape.

21. (new) The panel of claim 16, wherein the support board comprises cover layers and the first termination layer and second termination layer are glued to the cover layers.

22. (new) A process for producing a panel as recited in claim 1, comprising:
compressing and heating the glued fiber material to form the support board; and
applying a stamped formation to the termination layer to provide the structured
surface on the top side of the support board,
wherein the density on the top side of the support board is set to be lower than
the density of the support board on the underside.

REMARKS

Claims 1-9 and 11-22 are currently pending in the application. By this amendment, claims 1, 3-5, 7, and 8 are amended and claims 16-22 are added for the Examiner's consideration. Claims 11-15 were withdrawn from consideration in the Office Action dated March 10, 2006. The above amendments and added claims do not add new matter to the application and are fully supported by the specification. For example, support for the amendments and added claims is provided in the original claims, in Figures 1-2, and in pages 2-6 of the specification as originally filed. Reconsideration of the rejected claims in view of the above amendments and the following remarks is respectfully requested.

35 U.S.C. §103 Rejection

Claims 1-9 were rejected under 35 U.S.C. §103(a) for being unpatentable over U.S. Patent No. 4,283,450 issued to Luck et al. ("Luck") in view of U.S. Patent No. 6,617,009 issued to Chen et al. ("Chen"). This rejection is respectfully traversed.

The Examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. MPEP §2142.

The Examiner asserts that Luck and Chen teach or suggest all of the features of the claimed invention. Applicants respectfully disagree, and submit that the Examiner has failed to establish a *prima facie* case of obviousness because the applied references do not teach or suggest all of the recited features.

Independent Claim 1

The present invention relates generally to a panel and, more particularly, to a panel having a non-uniform density distribution throughout its thickness. In particular, claim 1 recites:

1. A panel having a support board made of glued and compressed fiber material to which a termination layer is applied in each case on a top side and an underside, and the termination layer of the top side has a structured surface, wherein the density on the top side of the support board is lower than the density of the support board on the underside.

The Examiner asserts that Luck discloses all of the features of claim 1 except for the termination layers. Applicants agree that Luck does not disclose a termination layer applied to a top side and an underside of a support board. Applicants also respectfully submit that Chen does not show these features. As such, Applicants submit that the applied references do not teach or suggest each and every element of the claimed invention.

Luck discloses a fiberboard having integrally formed high-density skins. The surface fibers of a conventional fiberboard are impregnated with urea, and the fiberboard is post-pressed at elevated temperature and pressure. The post-pressing

operation restructures the surface fibers contacted with urea to create the skins (col. 4, lines 35-36). The skins have a thickness of up to 0.06 inches (column 7, lines 35-43) and a density of about 40 to 55 pounds/ft³ (e.g., about 641 to 881 kg/m³). The remainder of the board has a density in the range of 10 to 35 pounds/ft³ (e.g., about 160 to 560 kg/m³). Luck does not disclose termination layers on the top side and bottom side of the board.

The Examiner asserts that Chen shows one or more wear layers or protective coatings upon the material (column 12, lines 20-25). The Examiner concludes that it would have been obvious to employ protective layers in the Luck panel. Applicants respectfully disagree and submit that Chen does not compensate for the deficiencies of Luck.

Instead, Chen discloses a plank having a core composed of thermoplastic material. The core comprises a top side and a bottom side. The top side may be provided with a decorative printed layer. A protective coating (e.g., transparent polyurethane) may be provided on top of the printed layer (lines 5-8 of column 3; lines 5-8 of column 9; lines 49-58 of column 11; and lines 15-23 of column 12). Chen does not, however, disclose termination layers on both the top side *and underside* of the core. To the contrary, Chen only discloses the protective layer on top of the printed layer, and only discloses the printed layer on the top side of the core. Chen makes absolutely no mention of a printed layer or corresponding protective layer *on the underside* of the core. In fact, Chen makes no mention of any type of layer on the underside of the core. Furthermore, there would be no motivation to provide such a layer on the underside of the Luck core, because there is no decoration on the

underside of Luck. Thus, the references, alone or in combination, do not teach or suggest a termination layer applied to the top side and underside of a support board, as recited in claim 1. Therefore, the references do not teach or suggest each and every feature of the claimed invention.

Dependent claims 2-8

Applicants respectfully submit that claims 2-8 depend from an allowable independent claim, and are allowable based upon the allowability of the independent claim.

Moreover, Applicants submit that the applied references do not teach or suggest many of the features of the dependent claims. For example, the references do not teach or suggest: the support board has a density of less than 700 kg/m³, as recited in claim 2; a gluing factor of greater than 10%, as recited in claim 3; a gluing factor of less than 20% for isocyanates, as recited in claim 6; and, a density of 1000 kg/m³ on the underside with a density in the range of 400 kg/m³ to 600 kg/m³ in the center of the support board, as recited in claim 9. The Examiner admits that “[n]either reference explicitly shows that the panel has a density, gluing factor, or density distribution as claimed.” The Examiner is of the opinion, however, that all of the recited features regarding density, gluing factor, and density distribution are obvious in view of Luck and Chen. Specifically, the Examiner asserts:

... such features are properties which can be easily determined by one of ordinary skill in the art. With regard to the limitations of density, gluing factor or density distribution, absent a showing of unexpected results, it is obvious to

modify the conditions of a composition because they are merely the result of routine experimentation. The experimental modification of prior art in order to optimize operation conditions (e.g. density, gluing factor or density distribution) fails to render claims patentable in the absence of unexpected results.

The Examiner is asserting facts without providing supporting documentary evidence. Thus, the Examiner has taken Official Notice of all of the claimed features regarding density, gluing factor, and density distribution without any specific support of documentary evidence. Applicants respectfully submit that the taking of Official Notice in this instance is improper.

The Examiner is reminded of the guidance provided by MPEP §2144.03 regarding the taking of Official Notice:

Official notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known. As noted by the court in *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970), the notice of facts beyond the record which may be taken by the examiner must be "capable of such instant and unquestionable demonstration as to defy dispute" (citing *In re Knapp Monarch Co.*, 296 F.2d 230, 132 USPQ 6 (CCPA 1961)).

...

If such notice is taken, the basis for such reasoning must be set forth explicitly. The examiner must provide specific factual findings predicated on sound technical and scientific reasoning to support his or her conclusion of common knowledge. See *Soli*, 317 F.2d at 946, 37 USPQ at 801; *Chevenard*, 139 F.2d at 713, 60 USPQ at 241. The applicant should be presented with the explicit basis on which the examiner regards the matter as subject to official notice and be allowed to challenge the assertion in the next reply after

the Office action in which the common knowledge statement was made.

...

If applicant adequately traverses the examiner's assertion of official notice, the examiner must provide documentary evidence in the next Office action if the rejection is to be maintained. See 37 CFR 1.104(c)(2). See also *Zurko*, 258 F.3d at 1386, 59 USPQ2d at 1697 ("[T]he Board [or examiner] must point to some concrete evidence in the record in support of these findings" to satisfy the substantial evidence test). If the examiner is relying on personal knowledge to support the finding of what is known in the art, the examiner must provide an affidavit or declaration setting forth specific factual statements and explanation to support the finding. See 37 CFR 1.104(d)(2).

In the current rejection, the Examiner has asserted that certain claimed properties (e.g., density, gluing factor, and density distribution) are the result of routine experimentation. However, the Examiner has failed to provide any basis for such reasoning. For example, the Examiner has failed to provide any reasoning regarding exactly what the scope of routine experimentation encompasses in the art of fiberboard panels, such as those provided by Luck. Moreover, the Examiner has failed to provide any reasoning that explains how, given Luck as a starting point, the claimed features are within such scope of routine experimentation. Accordingly, Applicants respectfully traverse the Examiner's assertion and request that documentary evidence supporting the assertion be provided in the next Office Action if the rejection is to be maintained.

Furthermore, Applicants submit that, contrary to the Examiner's assertions, the claimed invention does indeed provide unexpected results. Exemplary panels with density distribution and gluing factors according to implementations of the invention provide the following benefits, as described in the specification:

The fact that the density on the top side of the support board differs from that on the underside facilitates the operation of stamping or structuring the support board on account of the lower strength, as a result of which ***the wear to which the stamping plates or other structuring tools are subjected is reduced. It is likewise possible for the structuring or stamping to take place more quickly***, which overall results in quicker and more cost-effective production. (page 2, lines 1-9, emphasis added)

...

On account of the reduction in weight of the support boards of comparatively low relative density, the transportation costs are lowered and, furthermore, the support board achieves a ***hitherto unknown level of flexibility***, which allows for specific profile configurations, in particular in the case of so-called click-in connections. (page 3, lines 27-31, emphasis added)

...

Furthermore, the increase in the gluing factor results in ***improved moisture resistance*** since the reduced proportion of woodbased materials in the boards reduces the inclination of the support board to swell up. (page 3, lines 35-38, emphasis added)

...

In addition, the layers of different densities within the support board result in a refraction of the sound waves at the density-transition locations, ***so that the footfall and room sound is markedly reduced***. (page 4, lines 9-12, emphasis added)

Thus, the claimed invention does provide unexpected results. Therefore, contrary to the Examiner's assertion, the claimed invention is not merely the result of routine experimentation with the prior art.

Accordingly, Applicants respectfully request that the rejection over claims 1-9 be withdrawn.

Other Matters

New claims 16-22 are added to further define Applicants' invention and are believed to be distinct from the applied references and in condition for allowance.

Rejoinder of Withdrawn Claims

Applicants respectfully submit that claim 22 is a linking claim in accordance with MPEP §809.03. More particularly, claim 22 includes the process limitations of claim 11 and depends from product claim 1, thereby linking the process and the product. Therefore, pursuant to MPEP §821.04, rejoinder of withdrawn claims 11-15 is proper since the elected "panel invention" is allowable, and all claims to the non-elected "process invention" depend from or otherwise require all the limitations of an allowable claim (i.e., allowable claim 22 includes all of the features of claims 1 and 11).

Accordingly, Applicants respectfully request that claims 11-15 be rejoined, and claims 1-9 and 11-22 be allowed.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants submit that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicants hereby make a written conditional petition for extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 19-0089.

Respectfully submitted,
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